

CLAIMS

1. A setting accelerator for a composition comprising Portland cement characterised in that it is in the form of an aqueous suspension and in that it comprises:

- at least one calcium aluminate,
- from 0.5 to 4%, preferably from 0.6 to 2.3%, in weight relative to the total weight of the calcium aluminate(s), of a setting inhibitor of the aluminous cements,
- at least one anti-settling agent.

2. A setting accelerator according to claim 1 characterised in that it contains at least one dispersive agent.

3. A setting accelerator according to claim 1 or 2 characterised in that the setting inhibitor contains boric acid and/or at least one boric acid salt, and citric acid and/or at least one citric acid salt, boric acid salt and/or the boric acid salt(s) representing preferably from 0.4 to 3%, better from 0.5 to 2%, in weight of the total weight of the calcium aluminate(s), and citric acid and/or the citric acid salt(s) representing preferably from 0.1 to 1%, better from 0.1 to 0.5%, in weight of the total weight of the calcium aluminate(s).

4. A setting accelerator according to claim 1 or 2 characterised in that the setting inhibitor consists of boric acid and/or at least one boric acid salt, boric acid and/or the boric acid salt(s) representing from 0.5 to 4 % in weight of the total weight of the calcium aluminate(s).

5. A setting accelerator according to claim 3 or 4 characterised in that the boric acid salt(s) are selected among zinc borate, sodium borate and the mixtures thereof.

6. A setting accelerator according to claim 3 characterised in that the setting inhibitor is composed of boric acid and citric acid.

7. A setting accelerator according to claim 2 characterised in that the dispersive agent(s) represent from 0.3 to 1.7%, preferably 0.5% to 0.9%, in weight of the total weight of the calcium aluminate(s).

8. A setting accelerator according to any of the previous claims characterised in that the anti-settling agent(s) represent from 0.2 to 0.9%, in weight of the total weight of the calcium aluminate(s).

9. A setting accelerator according to any of the previous claims characterised in that the anti-settling agent(s) are selected among Xanthan gum, Welan gum, Bentonite and the mixtures thereof.

5. 10. A setting accelerator according to any of the previous claims characterised in that it comprises an anti-bacterial agent, representing preferably from 0.2 to 0.9% in weight of the total weight of the calcium aluminate(s).

11. A setting accelerator according to any of the previous claims characterised in that it comprises at least one colouring agent.

10. 12. A setting accelerator according to any of the previous claims characterised in that the composition comprising Portland cement is selected among Portland cement, slag cements, pozzolana cements and hydraulic limes, as well as among mortars and concretes comprising Portland cement, slag cement, pozzolana cement or hydraulic lime.

15. 13. A method of production of a setting accelerator for a composition comprising Portland cement as defined in any of the claims 2 to 12, characterised in that it comprises the following steps:

- pouring water into a mixing tub,
- turbine stirring at a speed greater than 600 rpm, preferably of the order of
- 20. 800 rpm,
- adding the setting inhibitor of the aluminous cements,
- adding the dispersive agent(s),
- adding gradually the calcium aluminate(s), whereas turbine stirring is raised to a speed greater than 1000 rpm, preferably of the order of 1400 rpm,
- 25. - adding the anti-settling agent(s),
- turbine stirring for at least 15 minutes, preferably for 30 to 40 minutes.

14. A method according to the previous claim characterised in that stirring is performed by a deflocculating turbine capable of causing high shearing effect.

30. 15. A method according to any of the claims 13 and 14 characterised in that, when the setting accelerator includes one or several colouring agents, said colouring agent(s) are introduced after the anti-settling agent.

35. 16. A method for accelerated setting of a composition comprising Portland cement, characterised in that it consists in adding to said composition comprising Portland cement, a setting accelerator as defined by any of the

claims 1 to 12, said setting accelerator representing from 10 to 40% in weight of calcium aluminate relative to Portland cement.

17. A setting accelerating method according to claim 16 characterised in that the composition comprising Portland cement is selected among
- 5 Portland cement, slag cements, pozzolana cements and hydraulic limes, as well as among mortars and concretes comprising Portland cement, slag cement, pozzolana cement or hydraulic lime.